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**Breaking the wave of democracy: The effect of foreign aid on the  
incumbent's re-election probability**

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## **Avertissement :**

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**Abstract**

We investigate whether foreign aid affects the probability of incumbent's re-election and then the Schumpeterian quality of democracy in developing countries. We present a simple theoretical framework, which captures the competitiveness of elections through the Tullock's approach based on the Contest Success Function. We obtain an ambiguous theoretical effect of foreign aid on the incumbent probability to be reelected: Foreign aid increases the prize of the electoral contest stimulating the challenger to increase his campaign effort; But, the incumbent may divert part of the aid, improving his advantage and reducing political competition. We investigate empirically this effect using panel data from 60 aid-recipient countries between 1980 and 2005. Our analysis shows that foreign aid increases the incumbent's re-election probabilities. However, this effect depends on recipients' democratic level and on the nature of foreign aid, consistently with our theoretical framework. While financial aid increases the probability of incumbent's re-election, political aid, especially through assistances in developing competitive electoral systems, reduces this probability.

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**Keywords:** Foreign aid; Elections; Incumbent's advantage.

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## 1. Introduction

As Schumpeter (1942) stated, the “competitive struggle for power and office” is one of the main characteristics of democracy.<sup>1</sup> However, electoral contests are often unfair and the incumbency advantage remains a grey area even in well developed democracies. This problem is particularly severe in the developing world when the lack of public finance transparency allows the men in office to capture part of public revenues, domestic or foreign.

We study how foreign aid affects the nature of the electoral competition in recipient countries, more precisely how aid may improve or not the incumbent’s probability of re-election. Our analysis contributes to the debate on the efficiency of foreign aid. Three worldwide trends lead to exacerbate the relevance of our approach: the spread of multi-party elections among developing countries, especially in Africa, the Millennium Development Goals (MDGs) and their related foreign aid flows, and the volatility of natural resources’ prices.

Beyond the recent collapse of authoritarian regimes in the Middle East and North Africa during the Arab Spring, multi-party elections have become more and more frequent in the developing world. In 2011, twenty three African countries held a national election; seventeen others will do it in 2012. However, democracy remains fragile as the last report of Freedom House states with a decline of the number of electoral democracies in 2011 and a fifth consecutive year of deterioration of political rights and civil liberties around the World.<sup>2</sup>

The second factor is the evolution of foreign aid in its volume, nature, and goals. Although since the end of the Cold War, there has been less certainty on the amounts of expected aid by recipient countries, aid volumes were revamped as a result of the Millennium Development Goals. In 2010, net official development assistance (ODA) flows from members of the Development Assistance Committee (DAC) reached its highest level, USD 128.7 billion, representing an increase of 6.5 percent with respect to the preceding year. Although the prospects for future aid

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<sup>1</sup> Schumpeter (1942) wrote (page 269): “The democratic method is that institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people’s vote.”

<sup>2</sup> In 2011, there were 115 electoral democracies as reported by Freedom House (2011), below the 123 democracies in 2005.

flows are not clear after the 2008-2009 global crisis and the more recent European crisis, these volumes remain overall significant.

The last factor, which affects democratic institutions in developing countries, is related to the public revenues generated in natural resource rich countries (mainly raw materials and energy). Developing countries which are rich in those resources<sup>3</sup> are particularly exposed to their boosts and busts, which challenge their governance, especially in electoral period.

Despite the introduction of multi-party elections in developing countries, regimes remain surprisingly durable (Van de Walle, 2001, 2005). Following a Schumpeterian approach of democracy, a possible explanation is the lack of an effective electoral competition, more precisely an excessive incumbent's advantage, which dissuades any political competitor. In developing countries, an incumbent has a large panel of instruments to influence polls, more or less legal or violent: for instance, manipulations of public spending (Vergne, 2009) and tax revenue (especially when they are rich in natural resources), coercion, intimidation, and fraud (Chatuverdi, 2005; Collier and Vicente, 2011).

When used as a resource rent, foreign aid has a windfall effect and may induce a curse (Dalgaard and Olsson, 2008). While the resource curse has been widely documented since the initial work of Sachs and Warner (2001), the aid curse remains debatable partly due to the heterogeneity of foreign aid. Several authors emphasized the rent seeking behaviours that aid may imply and its detrimental final effect (Brautigam, 2000, Acemoglu et al., 2004, Djankov et al., 2008, Morrison, 2009; Kalyvitis and Vlachaki, 2011).

Our analysis is based on two strands of the economic and political literature: the analysis of the relationship between foreign aid and democratization and the study of the incumbent's advantage. The link between aid and democratization remains debatable, partly due to the notion of democratization, which may differ from an author to another. For instance, Dunning (2004) establishes a positive effect of foreign aid on the level of democracy since 1987 in sub-Saharan Africa. On the contrary, for Morrison (2009), foreign aid reduces the taxation of elites in

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<sup>3</sup> Large volumes of natural resources remain to be likely discovered in these countries. For instance, the value of the sub-Saharan subsoil resource deposit is still significantly lower than that in developed countries (see World Bank, 2010).

democracies, increases spending in dictatorships, and provides more stability to both kinds of regimes. Knack (2004) finds that aid does not have a significant effect on changes in levels of democracy in recipient countries.

The second strand of the literature relevant to our analysis is the study of incumbent's advantage. Most empirical investigations of leader tenure analyzed the effect of domestic variables and personal characteristics, such as institutions, economic and fiscal performance, personal time in office, and age of the leader (Bienen and van de Walle, 1992; Chiozza and Choi, 2003).<sup>4</sup>

Our analysis differs from preceding literature in two ways. First, following Schumpeter (1942) we focus uniquely on the contestability of national elections, avoiding difficulties linked to the definition of the democratization process. Secondly, by studying the impact of foreign aid on the incumbent's re-election probability, we go beyond the appreciation of domestic or personal factors on the polls' result. Through our theoretical model and empirical analysis, we expand previous works on this issue. For Lancaster (1999), foreign aid in Africa prolonged the life of some corrupt and incompetent regimes by giving them a sense of security. Mobutu Sese Sekou is often cited as the prototype of a dictator propped up by outside powers. In a less extreme way, Van de Walle (2001) describes how political elites in some African countries manage to reform at a minimum to satisfy donors, and use "residual" funds to remain in power.

We develop a theoretical model based on the Contest Success Function approach. We consider an incumbent and a challenger competing to win the office. Candidates spend some efforts which might be licit, illicit or even violent, but which are always costly. The incumbent differs from the challenger by his ability to divert a part of public resources to increase his winning probability. We distinguish foreign aid from budgetary and extra-budgetary funds by their respective degree of diversion or capture by the incumbent. We then study how a variation of foreign aid may increase or reduce the probability of incumbent's re-election. We highlight a theoretical hypothesis: foreign aid increases the value of the prize of holding the office, and then the incentives for both candidates to compete. However, the captured

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<sup>4</sup> Some recent studies report negative incumbency advantage for some single-member-district countries in the developing world, such as India (Uppal, 2009) and Brazil (Titunik, 2009).

part of the aid improves the headstart of the incumbent and dissuades the challenger to compete.

Our empirical analysis relies on a panel data from 60 countries over the period 1980-2005. We use several identification strategies and deal with endogeneity issues concerning the relationship between aid and democracy. We adopt a general two-stage empirical setup. Financial aid increases significantly the probability of incumbent's re-election. This positive effect does not depend on the type/form of aid, loans or grants, or on its source, bilateral or multilateral. However, political aid taking the form of democracy-related targets, peace-building activities, conflict prevention, and resolution, has a negative impact of the re-election probability.

The paper proceeds as follows: Section 2 develops the theoretical framework; Section 3 presents the empiric strategy and data; Section 4 contains our econometric results and considers some robustness tests; Section 5 concludes.

## **2. The Theoretical Framework**

We model political competition process as a rent-seeking contest between two candidates: the incumbent and a challenger. Since our empirical analysis only concerns the second round of national elections in developing countries, we restrict our framework to the situation of contests between two opponents. Moreover, we do not envisage civil war as a possible result of elections. Here we focus exclusively on political competition even if the boundary between violence and votes may be often slight (Snyder, 2000).

The prize of the electoral competition is rents from holding the office. These rents result from budgetary and extra-budgetary resources. We distinguish two kinds of public revenue: foreign aid (A) and other public revenue (R), which may encompass tax and non tax revenue such as natural resource rent.

We assume that the incumbent has an advantage in the electoral contest through a privileged access to public revenues. In other terms, he is able to capture or divert part of public revenue and use it to remain in power. This assumption relies on the fungibility of aid. Guillaumont (2009) provides a survey of the empirical analysis of this issue, which remains debatable. Lahiri and Raimondos-Møller (2004) propose a model where the degree of aid diversion (aid fungibility) results from lobbies' activity in the recipient country. Following Lancaster (1999) and Van de Walle,

(2001) among other authors, we assume here that part of the aid may be captured by the incumbent for an electoral purpose.

A second assumption concerns the degree of appropriability which may differ depending on the source of public revenue. Let's denote by  $\alpha$  the ratio of foreign aid that the incumbent can capture and  $\beta$  the ratio of the other public revenue that he/she can divert. Several factors may determine these parameters ( $\alpha$  and  $\beta$ ) which vary among countries. For instance, natural resource-rich countries will have a higher  $\beta$ , *ceteris paribus*<sup>5</sup>. When well managed, sovereign fund tend to increase the transparency of the use of such natural resource related fiscal revenue, reducing its discretionary use by the government, therefore reducing  $\beta$ . Similarly, enforcing aid conditionality to ensure the accurate use of foreign aid may result in reducing the parameter  $\alpha$ .

Following the literature on political competition, we formalize the incumbent's probability of winning election as a Contest Success Function (CSF) denoted by  $p(x_i, x_c): R^+ \times R^+ \rightarrow [0, 1]$ , where  $x_i$  and  $x_c$  are the respective effort (political campaign spending) of the incumbent (i) and the challenger (c). Following Konrad (2002) we formalize the incumbent advantage through a "headstart advantage",<sup>6</sup> denoted by  $\delta = \alpha A + \beta R$ . Adopting the Tullock (1980) specification of the CSF function, we obtain:<sup>7</sup>

$$p(x_i + \delta, x_c) = \frac{x_i + \delta}{x_i + x_c + \delta}.$$

Let denote by  $G$ , the rent of holding the office. We have:  $G \equiv (1 - \alpha)A + (1 - \beta)R$ . The expected utility of the two opponents for the elections are respectively  $EU^i(.)$  for the incumbent and  $EU^c(.)$  for the challenger. We have:

$$\begin{aligned} EU^i(x_i, x_c) &= p(x_i + \delta, x_c)G - x_i, \\ EU^c(x_c, x_i) &= (1 - p(x_i + \delta, x_c))G - x_c. \end{aligned} \quad (1)$$

<sup>5</sup> The implementation of sovereign fund aims at increasing the transparency of the use of such revenue and reducing their discretionary use by the government.

<sup>6</sup> The incumbent's advantage may be formalized differently, for instance through early moving in a sequential game (see Hoffman and Rota-Graziosi, 2012 for a general analysis).

<sup>7</sup> Skaperdas (1996) and Clark and Riis (1998) provide an axiomatic justification of Tullock's CSF.



The following system of maximization programs defines the Nash Equilibrium:

$$\begin{cases} x_i^N \equiv \arg \max_{x_i \geq 0} EU^i(x_i, x_c), & x_c \text{ given} \\ x_c^N \equiv \arg \max_{x_c \geq 0} EU^c(x_c, x_i), & x_i \text{ given} \end{cases} \quad (2)$$

The First Order Conditions (FOCs) are then given by:<sup>8</sup>

$$\begin{cases} \frac{\partial EU^i(x_i, x_c)}{\partial x_i} = p_1(x_i + \delta, x_c)G - 1 = 0, \\ \frac{\partial EU^c(x_i, x_c)}{\partial x_c} = -p_2(x_i + \delta, x_c)G - 1 = 0, \end{cases}$$

which yields:

$$\begin{cases} x_i^N = \frac{1}{4}G - \delta, \\ x_c^N = \frac{1}{4}G. \end{cases} \quad (3)$$

The Nash equilibrium exists and is unique. Substituting  $x_i$  and  $x_c$  by their equilibrium value, we obtain the re-election probability:

$$p^N \equiv p(x_i^N + \delta, x_c^N) = \frac{5}{6} - \frac{1}{3} \frac{A + R}{(1 - 3\alpha)A + (1 - 3\beta)R}. \quad (4)$$

At the Nash equilibrium, the incumbent spends less than the challenger ( $x_i^N < x_c^N$ ).

Despite this, his probability of winning is higher due to his headstart advantage ( $p^N > 1/2$ ). Focusing on the incumbent's probability of winning elections, we deduce the following proposition:

**Proposition 1:**

*Under the assumptions of our framework, foreign aid decreases (increases) the probability of re-election if the incumbent is able to capture relatively more (less) aid than other public resources.*

**Proof:** From (1) and (2), we have

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<sup>8</sup> The Second Order Conditions are respected.

$$\frac{\partial p^N}{\partial A} = \frac{(\beta - \alpha) R}{[(1 - 3\alpha) A + (1 - 3\beta) R]^2} \geq 0 \Leftrightarrow \beta \geq \alpha. \quad (5)$$

An increase in foreign aid induces two effects: a substitution effect and an income effect. The former concerns only the incumbent: an increase in aid reinforces his headstart advantage reducing his incentives to invest more resources ( $x_i$ ) in political campaigns. There is substitution between foreign aid and his effort in political competition. The income effect concerns both candidates: aid increases the expected income, that is the prize of the political contest  $((1 - \alpha)A)$  and induces both candidates to improve their efforts in the contest. An increase in foreign aid has then an ambiguous effect on the incumbent's effort ( $\partial x_i^N / \partial A \leq 0$ ) while it always stimulates the challenger's effort ( $\partial x_c^N / \partial A > 0$ ).<sup>9</sup>

Proposition 1 establishes that the final effect of foreign aid on the incumbent's probability of re-election depends on the degrees of appropriability of both kinds of public resources. If  $\alpha$  is larger than  $\beta$ , then foreign aid increases more the challenger's effort than the incumbent's effort (which may even decrease), which results in a reduction of the incumbent's probability of re-election. Foreign aid in a country where public revenue are well managed ( $\beta$  low), will more likely improve democracy a la Schumpeter by increasing the electoral competition. However, strict conditionality ( $\alpha$  low) on foreign aid may be detrimental. At the extreme, if the incumbent is not able to capture any aid due for instance to strict conditionality ( $\alpha = 0$ ), then any increase in public revenue (natural resources rents for instance) raises his probability of re-election. In this case, only the income effect plays and the headstart advantage sufficient to favour the incumbent. In contrast, if the incumbent is not able to capture non-aid public revenue -the country has no natural resources rents or its public finance management is sufficiently transparent to avoid incumbent's capture of revenue- ( $\beta = 0$ ), then any increase in foreign aid reduces the incumbent's probability of victory. In this case, the substitution effect exceeds the income effect.

The comparison of appropriability degree of each kind of public revenue is not immediate. It depends on many factors such as the existence of natural resource

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<sup>9</sup> We remark that the marginal effort of the challenger is greater than this of the incumbent ( $\partial x_c^N / \partial A > \partial x_i^N / \partial A$ ).

rents in the country, its public finance management, its political institutions (its budgetary process for instance), the composition of the foreign aid it received and its applied conditionality, etc. Even if we restrict our analysis to natural resource as the main non-aid revenue, which may be diverted, there is no clear-cut result in the literature.<sup>10</sup>

### 3. Econometric Methodology and Data

We briefly outline the econometric methodology and describe the data. The list of foreign aid recipients is given in the Appendix A.

#### 3.1. *Econometric Methodology*

To investigate the effect of aid on the incumbent's re-election, we consider the following initial specification:

$$Prob (REELECT_{it}=1) = a_0 + a_1 Aid_{it} + a_3 Rents_{it} + a_4 X_{it}, \quad (6)$$

where the dependent variable is the probability of re-election in period  $t$  for country  $i$ ,  $Aid_{it}$  and  $Rents_{it}$  denote foreign aid and natural resource rents respectively,  $X$  is a vector of control variables, and  $i$  and  $t$  denote the country and the time period respectively.

We use Maximum Likelihood (ML) estimation and we estimate probit models that allow for non-linearities in the parameters.<sup>11</sup> Following the relevant empirical literature, we consider the potential endogeneity of aid flows. Bueno de Mesquita and Smith (2007, 2009) established how aid allocation patterns may be driven by calculation of the leverage likely to result. If donors send aid with the hope of achieving something, then two types of endogeneity problems will appear. First, the "treatment" of development assistance has not been randomly assigned. For instance, donors may direct aid to countries that are expected to experience a democratization episode as a result of these flows, or conversely aid may be

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<sup>10</sup> Isham et al. (2005) distinguish "point source" resources (more easily to capture) from "diffuse source." Similarly, Snyder and Bhavani (2005) consider lootable resources from nonlootable ones depending on the level of economic barriers to entry, and the mode of extraction (artisanal vs. industrial). Concerning foreign aid, Knack (2009) considers it as a "point source" since most of it is going to central government.

<sup>11</sup> Although OLS is widely used in empirical studies, it is not appropriate in our context where the dependent variable is binary and strong non-linearities may occur.

distracted from countries that appear politically unstable and close to a democracy recession. Several authors highlighted this kind of the endogeneity: Alesina and Dollar (2000)<sup>12</sup> or Doucouliagos and Paldam (2011).<sup>13</sup> A second source of endogeneity is omitted-variable bias and some unobserved country characteristics, for instance, institutional features, like bureaucracy quality or the rule of law, which may affect foreign aid flows and elections simultaneously.

To confront these issues, we employ alternatively Two-Stage Least Squares (2SLS) and Amemiya's (1978) Generalized Least Squares (AGLS), designed to deal with endogenous regressors in linear probability models and probit models, respectively. These two stages instrumental-variable estimation methods are conducted as follows. In the first-stage regressions, the endogenous explanatory variable is treated as linear function of the excluded instruments and the exogenous control variables of the re-election equation (Keshk, 2003; Maddala, 1983). In the second stage, the predictions from the first stage are included as explanatory variables in the re-election equation, instead of the suspected original endogenous terms between aid and some variables of interest. We then model the effect of aid on the probability of re-election within the following general two-stage empirical setup:

*Stage 1:*

$$\hat{u}_{it} = Aid_{it} - \left( \hat{a}_0 + \sum_k \hat{b}_k X_{it} + \sum_r \hat{c}_r Z_i \right). \quad (7)$$

*Stage 2:*

$$P(REELECT_{it} = 1) = G \left( \alpha + \beta Aid_{it} + \sum_k \gamma_k X_{it} + \lambda u_{it} \right). \quad (8)$$

where  $Aid_{it}$  denotes aid received by recipient country  $i$  at time  $t$ ,  $X_{it}$  includes a set of  $k$  observable characteristics of country  $i$ ,  $Z_i$  is a vector of  $r$  time-invariant instruments of  $Aid_{it}$  that are excluded from the re-election regression but are related to aid giving, and  $\hat{a}_0$  and  $a$  denote constant terms. Stage 1 is a reduced-form specification used to explain the endogenous part of aid receipts. Stage 2 is a probit model that estimates the probability of re-election.

<sup>12</sup> These authors state that “countries that have democratized have received a surge in foreign aid, immediately afterwards [...] the typical democratizing country gets a 50% increase in aid.”

<sup>13</sup> Through a meta-regression analysis these authors provide strong evidence that donors are heavily influenced both by the recipients' records of human rights and the degree of democracy.

### 3.2. *Data and Variables Definitions*

The dataset used in this study is based on information from several sources covering economic, fiscal, and political data. We also used information on institutional characteristics of countries, the timing of elections and data related to the party association and career circumstances of country leaders. A detailed description of the data sources and of the construction of the variables is listed in Appendix B. The combination of sources allows us to use data for 60 countries over the period 1980-2005. Overall, we have useable information on 307 electoral campaigns. The countries and election campaigns are listed in Appendix A.

#### 3.2.1. *Dependent Variable*

The dependent variable *REELECT* is a binary variable with a value of one if the incumbent was re-elected and zero if he or she was not. Its construction was based on information from the “World Political Leaders 1945-2005” database of Záráté’s Political Collections (ZPC) and from the “World Statesmen” online encyclopedia. These data allow us to follow the terms of individual leaders in office from appointment to termination, and to associate them with election dates. One concern is to identify the “effective” leader of a country, i.e. the person that de facto exercises power in a country. In parliamentary regimes, the prime minister is coded as the leader, in presidential systems, the president. The decision whether the prime minister or the president is the leader is based on the World Bank’s Database of Political Institutions (DPI) classification, as described in Persson and Tabellini (2003). Information on election dates and results is taken from the International Institute for Democracy and Electoral Assistance (IDEA) dataset “Voter Turnout since 1945” and from International Foundation for Election Systems Election Guide dataset.

Following Brender and Drazen (2008), we use two definitions of *REELECT* throughout the analysis. In the *narrow definition*, we include only observations where the leader is running for re-election herself (either as the leader of her party in a parliamentary election or personally in a presidential one). We restrict the sample to leaders who were in office for at least two fiscal years prior to the elections and (other than those who were prevented from competing due to term limits) were candidates in the elections or retired within the month before the elections (in which case we

classify the leader as losing re-election). In the *expanded definition*, we add cases in which a leader was substituted by another candidate from his party under the following specific circumstances: (1) the leader died in the year before the elections; or (2) the leader could not run for re-election due to the legal term limits. In these cases, the substitute leader (in the first case) or the candidate from the leader's party (in the second case) is treated as the incumbent. Additionally, in the expanded sample, we treat leaders who quit their job within a year before the election as having lost re-election, while in the narrow sample it is defined as a missing value as long as the leader quits more than a month before the election. This latter classification is in line with Alesina, Perotti and Tavares (1998), and Brender (2003).

Using the narrow sample has the advantage of focusing only on the cases where the same person who led the government before the elections is the one seeking election. The homogeneity of this sample may reflect a clearer relationship between performance and re-election, and avoids questions on the extent to which voters associate the new candidate with the policies of his predecessor. On the other hand, this definition involves a substantial loss of information. Therefore, in the remainder of this paper we present results using both samples.

### 3.2.2. *Variables of Interest*

The primary explanatory variable of interest in this study is *foreign aid*. We use the standard measure of aid, as provided by the Organization of Economic Cooperation and Development (OCDE). This measure corresponds to Net Official Development Assistance, which is the net disbursement amount, i.e., disbursements minus amortization, of those flows classified as Official Development Assistance. ODA includes grants and loans which are: (i) provided by official agencies; (ii) administered with the promotion of economic development and welfare in developing countries as the main objective; and (iii) at concessional financial terms and conveyed a grant element of at least 25 per cent.<sup>14</sup> We scale Net ODA with the recipients' GDP, both measured in current US dollars.<sup>15</sup> This measure reflects the magnitude of aid flows relative to the other fiscal revenues at a government's disposal.

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<sup>14</sup> The supply of military equipment and services, and the forgiveness of debts incurred for military purposes, are not reportable as ODA.

<sup>15</sup> Whether aid should be adjusted for purchasing power parity depends on whether the funds are spent on tradable or non-tradable goods. In practice donor money is spent on both so there

Our second variable of interest is *natural resource rents*. Usually, this concept has been proxied in the literature by primary commodity exports. However, this is a highly imperfect approximation. In this paper, we use the measure of resource rents from the World Bank's World Development Indicators (WDI). It was initially developed by Collier and Hoeffler (2009), who define rents as the difference between the price of a resource and its cost of extraction. They then multiply the unit rent by the total volume extracted. Rents are included for a variety of resources and are then divided by GDP. The resources considered in this paper are crude oil, natural gas, coal, bauxite, copper, iron, lead, nickel, phosphate, tin, zinc, silver, and gold. The measure is particularly accurate as, although commodity prices vary over time but are constant across countries, extraction costs vary over time and across countries.

### 3.2.3. *Control Variables*

A large number of control variables are used to capture economic, social and institutional determinants of re-election. The choice of these variables is mainly dictated by the existing theoretical and empirical literature, and is adjusted according to the data availability for the period under consideration.

We rely mainly on the literature of economic voting to select the economic control variables. As suggested in this literature, higher economic growth makes an incumbent win more likely.<sup>16</sup> This is consistent with the results by Bueno de Mesquita et al (2003). In their models of political leadership they find evidence that the provision of public goods, proxied by growth, extends the duration of a leader's stay in power. Our indicator of macroeconomic performance is *GDPPC*, which is the average annual growth rate of real GDP per capita between the current and the previous election year. We also control for *inflation*. Shiller (1996), Lewis-Beck (1996) and Alesina, Perotti and Tavares (1998), among others, find evidence that voters dislike inflation and punish governments that create it. To control for this possibility, we add the change in the inflation rate during the election year.

To the extent that expansionary fiscal policy can be successfully used to manipulate macroeconomic outcomes and provide higher growth, which in turn, it is argued, gains votes for the incumbent, loose fiscal policy will help an incumbent's re-

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is equal justification for adjusting or not adjusting. We find that our results are robust to the use of PPP-adjusted aid.

<sup>16</sup> See for example Duch and Stevenson (2008) and Lewis-Beck and Paldam (2000).

election prospects. Moreover, as noted by Rogoff (1990), fiscal expansions during election years could lead rational voters to vote for incumbents who produce them because it signals high competence when there is uncertainty about the incumbent's ability. We examine fiscal performance using two variables which are calculated on the basis of IFS variables, supplemented by GFS data when needed. The first one *Fisc\_term* reflects the change in ratio of the central government's balance to GDP over the term in office by comparing the average balance/GDP ratio in the two years before the election year with that in the previous two years. The second variable *Fisc\_elec* is the change in the balance/GDP ratio in the election year relative to the previous year, which is an indicator for election year fiscal expansions. We use changes rather than the levels of these variables, as we believe that they better reflect the impact of the incumbent on policy outcomes.

Moreover, our explanatory variables include some structural and institutional characteristics about the society. First, we control for the *level of democracy* using data on the Polity2 index drawn from the Polity IV Project (Marshall and Jaggers, 2004). To measure the extent of democratic/dictatorship across countries the Polity IV data consider the presence of political institutions and procedures through which citizens can express effective preferences about alternative policies and leaders, the existence of institutionalized constraints on the exercise of power by the executive, and the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation. The resulting measure of democracy/autocracy captures the competitiveness of political participation, openness and competitiveness of executive recruitment, and constraints on the chief executive in each country. Polity IV constructs a variable to measure these factors specifically for the purpose of time-series analysis, which makes each country's Polity score comparable over time. We use this measure, called Polity 2, for our examination. Previous work shows that leadership turnover is higher in democracies than in autocracies; hence the democracy coefficient should be negative (Chiozza and Goemans, 2004; Marinov, 2005).

Second, we introduce a *democracy wave* dummy variable, which is coded one for the years 1990 and after. Dunning (2004) shows that the positive effect of aid on democracy in Africa only occurs after 1989 when the threat of Western donors revoking aid becomes credible after the collapse of the Soviet Union. Client states knew that during the Cold War donors would not rescind aid because the other



superpower bloc would simply fill the gap. Thus, since the end of the Cold War, referred to here as the democracy wave, incumbents have been relatively less likely to win elections, although this trend may have changed in some countries as a result of the volumes committed in connection to the Millenium Development Goals.

Third, we control for the *freedom of the press* which may act as a control mechanism on incumbents. Direct influence over communication media is a potent source during election campaigns, and politicians have an incentive to gain control of the media to advance their career.<sup>17</sup> To measure press freedom, we use the Freedom House's media freedom score. This variable considers three areas of potential state influence: (i) legal environment, which encompasses laws, statues, constitutional provisions, and regulations that enable or restrict the media's ability to operate freely in a country; (ii) political environment, which evaluates the degree of political control over the content of news media in each country; and (iii) economic environment, which includes the structure of media ownership, media-related infrastructure, its concentration, the impact of corruption or bribery on news media content, and the selective withholding or bestowal of subsidies or other sources of financial revenue on some media outlets by the state. Media concerned by this index are TV, radio, newspaper, and the Internet.

Finally, in addition to these economic and institutional characteristics we also include information on the incumbent. First, we introduce the *age* of the incumbent. Besley and Case (1995) found that it was a significant determinant in gubernatorial defeats. Older governors were less likely to be elected. Second, we control for the *political power* of the incumbent as strong leaders have better chances to be re-elected. We collect data on the share of the votes received by each leader in the previous election and his party's strength in the legislature, taking into account various aspects of the nature of the political system. When the leader is elected directly, the vote share he received in the previous election gives some indication of his popularity and thus his political strength. In a parliamentary system, the percentage of seats in the parliament held by the leader's party may, in a similar way, represent his popularity and indicate his ability to carry out his program.

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<sup>17</sup> Boas and Hidalgo (2011) demonstrate that control of communication media is an important mechanism for perpetuating local political power in Brazil.

## 4. Empirical Results

We first present our instrumentation strategy and report the empirical results. Finally, we propose some robustness tests.

### 4.1. *Instrumenting for Aid Flows*

Finding strong and valid instruments of aid flows is a challenging task because candidate variables are needed to be highly correlated with aid and uncorrelated with re-election. In this subsection, we describe the main instruments used to address endogeneity issues.

The common practice is to regress aid flows on various pre-aid factors that have been pointed out by the literature as major aid allocation criteria. Boone (1996), Burnside and Dollar (2000), Easterly et al. (2004), and Knack (2004) have shown that there are several instruments for aid that can be used to address the endogeneity issue. Nevertheless, the majority of them are closely associated with the recipients' domestic conditions and are therefore highly likely to affect the electoral process as well. A possible solution to this problem can be found in another broadly accepted argument stating that, apart from the economic needs and policy performance of the recipients, the direction of foreign aid is mainly dictated by the strategic considerations of donor countries (Maizels and Nissanke, 1984; Schraeder, Hook and Taylor, 1998; Burnside and Dollar, 2000; Alesina and Dollar, 2000; Kuziemko and Werker, 2006). In this vein, we include several strategic variables seen from donors' perspective.

Specifically, we employ three instruments: logarithm of initial income, the logarithm of population in the initial period, and the group of variables that capture donors' strategic interests. There is ample evidence that donors direct aid to low-income countries, but also that they are influenced by the population size, with more populous countries receiving less aid proportionally ("country-size bias").<sup>18</sup> Thus, one

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<sup>18</sup> There are several reasons why the size of the recipient country may be an important determinant of aid flows. First, both international institutions and bilateral donors hesitate to transfer large nominal amounts, as they will come under much greater public scrutiny than relatively smaller amounts. Second, small countries may have relatively higher influence in some international organizations with the most obvious example being the voting processes at the United Nations. Third, small countries may be more willing to sell their influence, as they may gain more from joining a coalition than by acting independently.

should expect a negative correlation between aid and both income and population levels. We follow these studies and use initial income (measured by the log of real per capita income at the beginning of the period) to capture recipients' needs and initial population (in logarithms) to capture donors' interests. Moreover, in contrast to the altruist belief that aid is primarily motivated to assist the poor, substantial evidence also points towards political and geopolitical factors, such as strategic alliances of donor countries, as major driving forces behind aid programs. To control for these strategic interests, we use the standard political dummy variables that help capture the importance of a recipient to a particular donor. These dummies include sub-Saharan Africa, the Franc zone countries, Egypt, and Central American countries.

#### **4.2. Empirical Results**

We begin with the basic results. Columns (1)-(4) of Table 1 report estimation results obtained via OLS and ML for the basic specification, in which aid is assumed to be exogenous. The findings on the estimated coefficients of the control variables present some interesting results. First, we show that voters do not reward persistent budget deficits over the incumbent's term in office.<sup>19</sup> The coefficient of the change in the surplus to GDP ratio over the term in office, excluding the election year, is positive and in the expanded sample it is statistically significant, indicating that the probability of reelection is increasing when the fiscal balance improves during the leader's term in office. Moreover, the coefficients of the change in the ratio of the fiscal balance to GDP in the election year are close to zero and are far from being statistically significant. Therefore, even in developing countries, voters do not reward policies that generate election-year deficits.

Second, economic growth over the term in office is strongly rewarded by voters in developing countries. Higher growth has a positive and statistically significant effect on the probability of re-election in both samples, consistent with the stronger evidence on the existence of a political business cycle. These findings may suggest that in developing countries voters attribute a lot of the economic success of

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<sup>19</sup> Fisc refers to a change in the budget surplus, so that a positive value of Fisc\_term means that a higher surplus over the term of office increases the probability of reelection, or equivalently, a larger deficit reduces reelection chances.

their country to the man in office. On the contrary, the change of inflation rate in the election year has a negative effect on the probability of re-election.

Third, press freedom makes it more difficult for incumbents to be re-elected. This finding is consistent with Collier and Hoeffler (2009) who show that press freedom significantly reduces the likelihood of illicit electoral tactics and increase the chance of clean elections. Finally, our results are also supportive of the democracy surge of the Post-Cold War period. The democracy wave has a negative and statistically significant effect on the probability of re-election.

Turning to our variables of interest, estimation results show that foreign aid exerts a positive and statistically significant effect on the probability of re-election. Interestingly, the effect of natural resource rents is significant and in the same direction but smaller than the effect of aid. This result corroborates Djankov et al. (2008) who find that the negative impact of aid on political institutions is bigger than the effect of oil rents. This could be due to the fact that part of the material resource rents is captured by foreign investors and multinationals operating in the country.

We next move on to the results from the two-stage estimation. We first report some tests on the instrumentation strategy as well as on the power of the instruments employed, since weak instruments could yield biased estimates (Bound et al., 1995). As a first step, to identify whether aid flows are endogenous, we employ the Hausman test of exogeneity for the linear probability models and the Smith-Blundell test of exogeneity for the probit regressions. The chi-squared values of these tests always reject the null hypothesis that aid flows are exogenous. The validity of the instrumentation approach is checked by first evaluating the explanatory power of the selecting instruments using an F-test to assess their joint significance. The null hypothesis of the test is that instruments' set is weak. Instruments are considered strong and relevant if the F-statistic exceeds 10, as suggested by Staiger and Stock (1997). The reported values of the statistic always exceed the conventional threshold implying that the selected set of instruments is not weak. Also, to test if instrumental variables are exogenous, i.e. uncorrelated with the error term of the probability regression, a Sargan/Hansen-type test of overidentifying restrictions is performed, where the null hypothesis is that the selected instruments are validly excluded from the second-stage regression. The reported chi-squared statistics of the test always lead to non-rejection of the null hypothesis that the selected instruments method is valid

and that the endogeneity of aid is properly addressed within the present empirical setup.

In Table 2 we report first-stage estimation results of aid equation obtained via OLS corrected for heteroscedasticity and autocorrelation. In this regression, foreign aid is regressed on a set of instruments comprised by pre-aid factors, regional dummies, and the explanatory variables of the corresponding second-stage re-election equation. As expected, we find that foreign assistance is systematically directed to small and less developed countries. In addition, Egypt and Sub-Saharan countries enjoy relatively more aid, *ceteris paribus*. However, we find no evidence that countries in Central America and in the French Franc Zone receive more assistance.

Table 3 reports the 2SLS and AGLS estimation results. Again, we report the marginal effects of the controls on the probability of re-election calculated at their sample means, instead of the probit coefficients. Compared to Table 1, the coefficients of aid are now larger in magnitude.

### **4.3. *Alternative Specifications***

Our theoretical framework highlights the crucial role of the degree of appropriability of domestic (tax and non-tax) revenue and of foreign aid. We consider in this subsection if the democracy level of the recipient country or the nature of foreign aid (financial or not, bilateral or multilateral, loans or grants) affect our preceding empirical results.

#### **4.3.1. *Conditional Effect***

The positive effect of foreign aid on re-election probability may depend on recipient regime type. Accordingly, we add to the regressions an interaction term equal to the product of aid and democracy level. Table 4 reports the results. The coefficient for the interaction term is negative and statistically significant, indicating that foreign aid's impact on re-election is less important in more democratic systems. Misappropriation of foreign aid appears then less frequent in more democratic countries, since democracy implies better institutions or in our terms a lower value of the parameter  $\beta$ .

#### 4.3.2. *The Quality of Foreign Aid*

The second critical factor which affects our theoretical results is the degree of foreign aid ( $\alpha$ ). We appreciate the final effect of foreign aid depending of its nature.

##### **Financial versus Political Aid**

During the last decade, donors have been increasing political assistance which mainly targets good governance, human rights, democratization through competitive elections, and civil society. Whereas aid given in the form of budgetary support cannot be easily tracked by donors, political aid coming mainly in the form of technical assistance has a good potential to serve as an impediment to the status quo effect of misused financial aid, as it cannot be easily diverted (White and Djikstra, 2003; Helleiner, 2000). Several democracy-promotion activities of political aid may discourage regime survival, or at least reduce the incumbent's advantage ( $\delta$  in our theoretical framework). These include the development of competitive electoral systems, elections monitoring, advice promotion on electoral regulation and support for the development of political parties, constitutional reform, strengthening legislatures' powers and institutional mechanisms that improve governments' accountability and citizens' responsiveness. In addition, activities that target good governance, such as the training of security forces in their responsibilities under a democratic regime, the encouragement of citizen political participation, the support for the development of independent news media, and the support for the development of Non-Governmental Organizations (NGOs) are also included.

To distinguish between financial and political aid, we use the data from the Creditor Reporting System (CRS) Aid Activity database provided by OECD. Financial aid corresponds to DAC 5 CODE 450-V. Total Sector Allocable includes aid for: (i) Social infrastructures and services (DAC 5 CODE 100); (ii) Economic infrastructures (DAC 5 CODE 200); (iii) Production sectors (DAC 5 CODE 300); and (iv) Multisector (DAC 5 CODE 400), i.e. aid for general environment protection, women in development, and other multisector activities including rural and urban development. Regarding political aid we use data from Government and Civil Society Aid (DAC 5 CODE 150). This dataset covers a wide range of democracy-related targets and peace-building activities, classified into two broad categories: Government and civil society, general (DAC 5 CODE 151) and Conflict prevention and resolution, peace and security (DAC 5 CODE 152), and several subcategories.

The results are presented in Table 5. We observe that financial aid increases the probability of re-election while political aid has the reverse effect, thus confirming our hypotheses. Incumbent government can misappropriate financial aid flows to increase popular support, whereas at the same time political aid flows lower the probability that the government incumbent stays in power.

### **Bilateral versus Multilateral Aid**

The effect of aid may also differ between bilateral and multilateral aid flows. Several studies have shown that the impacts between these forms of aid are likely to be different (Maizels and Nissanke, 1984; Frey and Schneider, 1986; Alesina and Dollar, 2000). Estimation results are presented in Table 6 and show that the positive effect of aid on the probability of re-election persists in the two sets of the regressions. This result implies that the risk of capture by the incumbent does not diminish with the enforcement of conditionality usually attached to multilateral loans.

### **Loans versus Grants**

Finally, aid is disaggregated into grants and loans. Loans are concessionary, some are never repaid, and governments with short horizons may view them equivalently to grants even if they expect that successor governments will eventually repay the principal. Nevertheless, the nominal obligation to repay loans could deter the tendency to misappropriate aid (Gupta et al. 2004). This conjecture is not supported by the data (Table 7). Both grants and loans have a positive and significant effect on the probability of re-election, implying that the fungibility of aid is perceived equally by the recipient country regardless of whether or not the funds need to be reimbursed to the donor.

## **5. Conclusion**

Beyond policy reports, case studies, and anecdotal evidence, we have investigated the effect of foreign aid on the incumbent's probability of re-election. Towards this end, we developed a simple theoretical model to highlight how foreign aid may affect the electoral competition process. The relationship between foreign aid and the incumbent's probability of re-election remain theoretically ambiguous. On the

one hand, the incumbent has a headstart advantage and is able to capture a part of foreign aid, increasing his probability of re-election. On the other hand, foreign aid increases the value of the contest itself and then the challenger's incentives to compete. We addressed this issue empirically within the context of a two-stage binary response model which takes into account the potential endogeneity of aid. Using a sample of 60 aid recipients for the period 1980-2005, we find considerable evidence that aid flows affect positively the probability of incumbent's re-election. We also established that the positive effect of aid flows on the re-election prospects is moderated in more democratic societies. In addition, aid used for political purposes –political aid– has a non-significant effect on the incumbent's probability of re-election, whereas aid for production purposes –financial aid– has a positive and statistically significant effect. Finally, the distinction between, on the one hand bilateral and multilateral aid, and on the other hand loans and grants, does not affect our results, indicating that the risk of capture by the incumbent remains strong regardless of the source or type of aid received.

Foreign aid often acts as an exogenous and unconditional windfall of resources and can therefore be misappropriated by the regime in power. To prevent financial aid misuse, attempts to improve accountability in foreign aid, though costly, become imperative. Given the nature of electoral competition in presence of incumbents, an immediate policy recommendation may be for instance the respect of presidential term limits when they exist.



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**Table 1: Marginal effects on the probability of re-election: Exogenous aid flows**

	OLS		ML	
	(1) Narrow sample	(2) Expanded sample	(3) Narrow sample	(4) Expanded sample
Dependent variable: REELECT				
Aid	1.072** (0.006)	1.112** (0.006)	1.085** (0.007)	1.200** (0.007)
Democracy level	-0.016 (0.003)	-0.017 (0.003)	-0.116 (0.004)	-0.120 (0.004)
Democracy wave	-0.500* (0.055)	-0.502* (0.060)	-0.650* (0.062)	-0.682* (0.064)
Fisc_term	2.820 (0.450)	3.002* (0.450)	3.020 (0.076)	3.202* (0.077)
Fisc_elec	0.351 (0.773)	0.890 (0.332)	0.352 (0.763)	0.780 (0.312)
GDPPC	5.065** (0.012)	5.070** (0.046)	5.065** (0.011)	5.081** (0.026)
Inflation	-0.750* (0.056)	-0.850* (0.052)	-1.050* (0.054)	-1.150* (0.051)
Resources rents	0.900* (0.055)	0.900* (0.058)	0.950* (0.053)	0.952* (0.057)
Press freedom	-1.205* (0.200)	-1.300* (0.203)	-1.420* (0.210)	-1.450* (0.211)
Majoritarian system	0.388 (0.526)	0.390 (0.600)	0.408 (0.524)	0.420 (0.608)
Votes	1.019* (0.223)	1.240* (0.223)	1.819* (0.213)	1.840* (0.214)
Party	0.500* (0.400)	0.502* (0.400)	0.600* (0.450)	0.603* (0.450)
Age	0.900 (0.780)	0.901 (0.780)	0.925 (0.812)	0.925 (0.817)
Constant	11.923** (0.020)	11.923** (0.020)	11.925** (0.020)	11.925** (0.020)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.112	0.112	0.139	0.139
F-statistic (Prob)	11.89 (0.00)	11.62 (0.00)		
Wald X <sup>2</sup> (Prob)			73.74 (0.00)	74.05 (0.00)
No of Observations	240	300	240	300

Notes: Estimation method is OLS for specifications (1) and (2) and ML for specifications (3) and (4). Maximum estimates correspond to the probit model specification and marginal effects are calculated at the sample means of the control variables. For each independent variable, the first row gives the estimates coefficients whereas values in parentheses denote White Heteroskedasticity- and autocorrelation- robust standard errors. \*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively. F-statistic and Wald Chi-Squared statistics correspond to the test on the joint significance of the control variables set.

**Table 2: First-Stage regression results**

Dependent variable: Aid (% of GDP)	
Initial GDP	-3.40*** (0.45)
Initial population	-4.01*** (0.39)
Sub-Sahara Africa	4.30*** (0.59)
Egypt	3.45*** (0.89)
Central America	-1.02*** (0.57)
Franc Zone	-1.05*** (0.55)
Democracy level	0.011 (0.29)
Democracy wave	0.990* (0.60)
Fisc_term	0.120 (0.68)
Fisc_elec	0.115 (0.89)
GDPPC	0.789 (0.63)
Inflation	1.450 (0.35)
Resource rents	-1.117* (0.29)
Press freedom	0.200 (0.42)
Majoritarian system	0.012 (0.56)
Votes	1.890* (0.36)
Party	0.980 (0.45)
Age	1.116 (0.86)
Constant	15.060*** (0.35)
R <sup>2</sup>	0.40
F-statistic of excluded instruments (Prob)	29.48 (0.00)
Observations	1080

Notes: Values in parentheses denote standard errors unless otherwise indicated.

\*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively.

**Table 3: Marginal effects on the probability of re-election: Endogenous aid flows**

	2SLS		AGLS	
	(1) Narrow sample	(2) Expanded sample	(3) Narrow sample	(4) Expanded sample
Dependent variable: REELECT				
Aid	1.082** (0.016)	1.212** (0.016)	1.205** (0.027)	1.400** (0.027)
Democracy level	0.036 (0.013)	0.047 (0.013)	0.126 (0.024)	0.129 (0.024)
Democracy wave	-0.400* (0.045)	-0.503* (0.063)	-0.600* (0.065)	-0.672* (0.067)
Fisc_term	2.840 (0.150)	3.024* (0.150)	3.080 (0.176)	3.282* (0.177)
Fisc_elec	0.351 (0.763)	0.790 (0.342)	0.452 (0.663)	0.680 (0.612)
GDPPC	5.165** (0.112)	5.170** (0.146)	5.165** (0.111)	5.181** (0.126)
Inflation	-0.700* (0.056)	-0.850* (0.052)	-1.050* (0.064)	-1.150* (0.061)
Resources rents	0.800* (0.065)	0.800* (0.068)	0.850* (0.063)	0.852* (0.067)
Press freedom	-1.105* (0.201)	-1.310* (0.205)	-1.320* (0.210)	-1.400* (0.213)
Majoritarian system	0.488 (0.626)	0.395 (0.620)	0.409 (0.514)	0.429 (0.618)
Votes	1.019* (0.223)	1.245* (0.223)	1.719* (0.213)	1.740* (0.214)
Party	0.501* (0.400)	0.512* (0.400)	0.602* (0.450)	0.603* (0.450)
Age	0.800 (0.780)	0.801 (0.780)	0.825 (0.812)	0.825 (0.817)
Constant	11.803** (0.020)	11.803** (0.020)	11.825** (0.020)	11.825** (0.020)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.23	0.23	0.16	0.16
Second-stage F-statistic (Prob)	7.89 (0.00)	7.62 (0.00)		
Second-stage Wald X <sup>2</sup> (Prob)			60.74 (0.00)	84.05 (0.00)
Hausman Test X <sup>2</sup> (Prob)	7.69 (0.00)	8.55 (0.00)		
Smith-Blundell test X <sup>2</sup> (Prob)			13.61 (0.00)	14.52 (0.00)
Hansen J-statistic (Prob)	9.43 (0.09)	9.45 (0.09)		
No of Observations	240	300	240	300

Notes: Estimation method is 2SLS for specifications (1) and (2) and AGLS for specifications (3) and (4). For each independent variable, the first row gives the estimates coefficients whereas values in parentheses denote White Heteroskedasticity- and autocorrelation- robust standard errors. \*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively.



**Table 4: Foreign aid and regime type**

	2SLS		AGLS	
	(1) Narrow sample	(2) Expanded sample	(3) Narrow sample	(4) Expanded sample
Dependent variable: REELECT				
Aid	1.090** (0.010)	1.250** (0.019)	1.304** (0.028)	1.408** (0.047)
Aid x Democracy level	-0.340** (0.090)	-0.502** (0.120)	-0.630** (0.032)	-0.650** (0.041)
Democracy level	0.136 (0.053)	0.248 (0.070)	0.256 (0.074)	0.280 (0.080)
Democracy wave	-0.820* (0.045)	-0.903* (0.063)	-0.910* (0.075)	-0.912* (0.077)
Fisc_term	2.040 (0.050)	2.124* (0.050)	2.180 (0.076)	2.272* (0.087)
Fisc_elec	0.401 (0.163)	0.690 (0.242)	0.752 (0.563)	0.780 (0.712)
GDPPC	5.005** (0.114)	5.140** (0.136)	5.165** (0.101)	5.184** (0.136)
Inflation	-0.510* (0.156)	-0.650* (0.152)	-1.000* (0.164)	-1.250* (0.161)
Resources rents	0.740* (0.045)	0.742* (0.048)	0.750* (0.053)	0.753* (0.057)
Press freedom	-1.005* (0.211)	-1.210* (0.215)	-1.220* (0.210)	-1.280* (0.213)
Majoritarian system	0.490 (0.626)	0.495 (0.620)	0.489 (0.514)	0.490 (0.618)
Votes	1.119* (0.223)	1.240* (0.223)	1.319* (0.213)	1.340* (0.214)
Party	0.411* (0.430)	0.502* (0.432)	0.602* (0.456)	0.603* (0.470)
Age	0.850 (0.780)	0.871 (0.780)	0.877 (0.812)	0.890 (0.817)
Constant	11.403** (0.020)	11.403** (0.020)	11.425** (0.020)	11.425** (0.020)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.28	0.28	0.20	0.20
Second-stage F-statistic (Prob)	7.89 (0.00)	7.62 (0.00)		
Second-stage Wald X <sup>2</sup> (Prob)			80.04 (0.00)	85.15 (0.00)
Hausman Test X <sup>2</sup> (Prob)	17.69 (0.00)	17.55 (0.00)		
Smith-Blundell test X <sup>2</sup> (Prob)			15.61 (0.00)	15.55 (0.00)
Hansen J-statistic (Prob)	10.43 (0.05)	10.65 (0.05)		
No of Observations	240	300	240	300

Notes: Estimation method is 2SLS for specifications (1) and (2) and AGLS for specifications (3) and (4). For each independent variable, the first row gives the estimates coefficients whereas values in parentheses denote White Heteroskedasticity- and autocorrelation- robust standard errors. \*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively.

**Table 5: Marginal effects on the probability of re-election:  
Financial aid versus political aid**

	2SLS		AGLS	
	(1) Narrow sample	(2) Expanded sample	(3) Narrow sample	(4) Expanded sample
Dependent variable: REELECT				
Financial aid	1.882** (0.017)	1.892** (0.017)	1.895** (0.037)	1.910** (0.037)
Political aid	0.500 (0.020)	0.501 (0.020)	0.520 (0.023)	0.521 (0.023)
Democracy level	0.036 (0.013)	0.047 (0.013)	0.126 (0.024)	0.129 (0.024)
Democracy wave	-0.400* (0.045)	-0.503* (0.063)	-0.600* (0.065)	-0.672* (0.067)
Fisc_term	2.840 (0.150)	3.024* (0.150)	3.080 (0.176)	3.282* (0.177)
Fisc_elec	0.351 (0.763)	0.790 (0.342)	0.452 (0.663)	0.680 (0.612)
GDPPC	5.165** (0.112)	5.170** (0.146)	5.165** (0.111)	5.181** (0.126)
Inflation	-0.700* (0.056)	-0.850* (0.052)	-1.050* (0.064)	-1.150* (0.061)
Resources rents	0.800* (0.065)	0.800* (0.068)	0.850* (0.063)	0.852* (0.067)
Press freedom	-1.105* (0.201)	-1.310* (0.205)	-1.320* (0.210)	-1.400* (0.213)
Majoritarian system	0.488 (0.626)	0.395 (0.620)	0.409 (0.514)	0.429 (0.618)
Votes	1.019* (0.223)	1.245* (0.223)	1.719* (0.213)	1.740* (0.214)
Party	0.501* (0.400)	0.512* (0.400)	0.602* (0.450)	0.603* (0.450)
Age	0.800 (0.780)	0.801 (0.780)	0.825 (0.812)	0.825 (0.817)
Constant	11.803** (0.020)	11.803** (0.020)	11.825** (0.020)	11.825** (0.020)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.25	0.25	0.20	0.20
Second-stage F-statistic (Prob)	7.89 (0.00)	7.62 (0.00)		
Second-stage Wald X <sup>2</sup> (Prob)			60.74 (0.00)	84.05 (0.00)
Hausman Test X <sup>2</sup> (Prob)	7.69 (0.00)	8.55 (0.00)		
Smith-Blundell test X <sup>2</sup> (Prob)			13.61 (0.00)	14.52 (0.00)
Hansen J-statistic (Prob)	9.43 (0.09)	9.45 (0.09)		
No of Observations	240	300	240	300

Notes: Estimation method is 2SLS for specifications (1) and (2) and AGLS for specifications (3) and (4). For each independent variable, the first row gives the estimates coefficients whereas values in parentheses denote White Heteroskedasticity- and autocorrelation- robust standard errors. \*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively.

**Table 6: Marginal effects on the probability of re-election:  
Multilateral versus bilateral aid**

	2SLS		AGLS	
	(1) Narrow sample	(2) Expanded sample	(3) Narrow sample	(4) Expanded sample
Dependent variable: REELECT				
Multilateral aid	1.042** (0.015)	1.052** (0.015)	1.065** (0.017)	1.070** (0.017)
Bilateral aid	1.000** (0.200)	1.005** (0.205)	1.010** (0.210)	1.015** (0.210)
Democracy level	0.136 (0.013)	0.147 (0.013)	0.136 (0.024)	0.140 (0.024)
Democracy wave	-0.400* (0.045)	-0.503* (0.063)	-0.600* (0.065)	-0.672* (0.067)
Fisc_term	2.440 (0.150)	3.004* (0.150)	3.082 (0.176)	3.284* (0.177)
Fisc_elec	0.351 (0.763)	0.790 (0.342)	0.452 (0.663)	0.680 (0.612)
GDPPC	5.165** (0.112)	5.170** (0.146)	5.165** (0.111)	5.181** (0.126)
Inflation	-0.700* (0.056)	-0.850* (0.052)	-1.050* (0.064)	-1.150* (0.061)
Resources rents	0.850* (0.075)	0.850* (0.078)	0.860* (0.063)	0.862* (0.067)
Press freedom	-1.105* (0.201)	-1.310* (0.205)	-1.320* (0.210)	-1.400* (0.213)
Majoritarian system	0.488 (0.626)	0.395 (0.620)	0.409 (0.514)	0.429 (0.618)
Votes	1.019* (0.223)	1.245* (0.223)	1.719* (0.213)	1.740* (0.214)
Party	0.501* (0.400)	0.512* (0.400)	0.602* (0.450)	0.603* (0.450)
Age	0.800 (0.780)	0.801 (0.780)	0.825 (0.812)	0.825 (0.817)
Constant	11.803** (0.020)	11.803** (0.020)	11.825** (0.020)	11.825** (0.020)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.21	0.21	0.15	0.15
Second-stage F-statistic (Prob)	8.89 (0.00)	8.62 (0.00)		
Second-stage Wald X <sup>2</sup> (Prob)			60.74 (0.00)	84.05 (0.00)
Hausman Test X <sup>2</sup> (Prob)	7.69 (0.00)	8.55 (0.00)		
Smith-Blundell test X <sup>2</sup> (Prob)			14.61 (0.00)	15.52 (0.00)
Hansen J-statistic (Prob)	10.45 (0.08)	10.45 (0.08)		
No of Observations	240	300	240	300

Notes: Estimation method is 2SLS for specifications (1) and (2) and AGLS for specifications (3) and (4). For each independent variable, the first row gives the estimates coefficients whereas values in parentheses denote White Heteroskedasticity- and autocorrelation- robust standard errors. \*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively.

**Table 7: Marginal effects on the probability of re-election:  
Loans versus grants**

Dependent variable: REELECT	2SLS		AGLS	
	(1) Narrow sample	(2) Expanded sample	(3) Narrow sample	(4) Expanded sample
Loans	1.040** (0.017)	1.042** (0.017)	1.045** (0.037)	1.050** (0.037)
Grants	1.010** (0.013)	1.012** (0.013)	1.100** (0.015)	1.102** (0.015)
Democracy level	0.036 (0.013)	0.047 (0.013)	0.126 (0.024)	0.129 (0.024)
Democracy wave	-0.400* (0.045)	-0.503* (0.063)	-0.600* (0.065)	-0.672* (0.067)
Fisc_term	2.840 (0.150)	3.024* (0.150)	3.080 (0.176)	3.282* (0.177)
Fisc_elec	0.351 (0.763)	0.790 (0.342)	0.452 (0.663)	0.680 (0.612)
GDPPC	5.165** (0.112)	5.170** (0.146)	5.165** (0.111)	5.181** (0.126)
Inflation	-0.700* (0.056)	-0.850* (0.052)	-1.050* (0.064)	-1.150* (0.061)
Resources rents	0.840* (0.066)	0.840* (0.068)	0.860* (0.073)	0.868* (0.077)
Press freedom	-1.205* (0.205)	-1.320* (0.205)	-1.420* (0.220)	-1.440* (0.223)
Majoritarian system	0.488 (0.626)	0.395 (0.620)	0.409 (0.514)	0.429 (0.618)
Votes	1.019* (0.223)	1.245* (0.223)	1.719* (0.213)	1.740* (0.214)
Party	0.501* (0.400)	0.512* (0.400)	0.602* (0.450)	0.603* (0.450)
Age	0.800 (0.780)	0.801 (0.780)	0.825 (0.812)	0.825 (0.817)
Constant	11.803** (0.020)	11.803** (0.020)	11.825** (0.020)	11.825** (0.020)
R <sup>2</sup> /Pseudo R <sup>2</sup>	0.22	0.22	0.15	0.15
Second-stage F-statistic (Prob)	7.89 (0.00)	7.62 (0.00)		
Second-stage Wald X <sup>2</sup> (Prob)			70.75 (0.00)	74.15 (0.00)
Hausman Test X <sup>2</sup> (Prob)	7.69 (0.00)	8.55 (0.00)		
Smith-Blundell test X <sup>2</sup> (Prob)			13.61 (0.00)	14.52 (0.00)
Hansen J-statistic (Prob)	9.43 (0.09)	9.45 (0.09)		
No of Observations	240	300	240	300

Notes: Estimation method is 2SLS for specifications (1) and (2) and AGLS for specifications (3) and (4). For each independent variable, the first row gives the estimates coefficients whereas values in parentheses denote White Heteroskedasticity- and autocorrelation- robust standard errors. \*, \*\*, \*\*\* correspond to statistical significance at 10%, 5%, and 1% respectively.

## Appendices

### *Appendix A: Sample Characteristics*

**Table A1: Countries and elections dates**

<b>Countries</b>	<b>Elections Dates</b>	<b>Countries</b>	<b>Elections Dates</b>
Algeria	91, 95, 97, 99, 2002, 2004	Lesotho	93, 98, 2002
Argentina	83, 89, 95, 99, 2003	Malawi	94, 99, 2004
Bangladesh	81, 86, 88, 91, 96, 2001	Malaysia	82, 86, 90, 95, 99, 2004
Barbados	81, 86, 91, 94, 99, 2003	Mali	92, 97, 2002
Belize	84, 89, 93, 98, 2003	Mauritania	92, 96, 2001, 2003
Benin	91, 96, 2001	Mauritius	83, 87, 91, 95, 2000, 2005
Bolivia	80, 85, 89, 93, 97, 2002, 2005	Mexico	82, 88, 94, 2000
Botswana	84, 89, 94, 99, 2004	Mozambique	94, 99, 2004
Brazil	82, 86, 89, 94, 98, 2002	Nepal	81, 86, 91, 94, 97, 99
Bulgaria	91, 92, 96, 97, 2001, 2005	Nicaragua	84, 90, 96, 2001
Burundi	93, 2005	Niger	93, 95, 96, 99, 2004
Cameroon	88, 92, 97, 2002, 2004	Panama	84, 89, 94, 99, 2004
Chile	89, 93, 99, 2005	Papua New G.	82, 87, 92, 97, 2002
Colombia	82, 86, 90, 91, 94, 98, 2002	Pakistan	85, 88, 90, 93, 97, 2002
Costa Rica	82, 86, 90, 94, 98, 2002	Peru	80, 85, 90, 95, 2000, 2001
Croatia	92, 95, 97, 2000, 2005	Philippines	87, 92, 95, 98, 2001, 2004
Dominican Rep.	82, 86, 90, 96, 2000, 2004	Poland	90, 95, 2000, 2005
Ecuador	84, 88, 92, 96, 98, 2002	Romania	92, 96, 2000, 2004
Egypt	84, 87, 90, 95, 2000, 2005	Russia	91, 96, 2000, 2004
El Salvador	84, 89, 94, 99, 2004	Senegal	83, 88, 93, 96, 2000
Ethiopia	92, 2000, 2005	Sri Lanka	82, 88, 94, 99, 2005
Gambia	82, 87, 92, 96, 2001	Togo	85, 90, 94, 98, 2003, 2005
Ghana	92, 96, 2000, 2004	Thailand	83, 86, 88, 92, 95, 96, 2001, 2005
Guatemala	82, 85, 90, 91, 95, 99, 2003	Trinidad & T.	81, 86, 91, 95, 2000, 2001, 2006
Honduras	81, 85, 89, 93, 97, 2001, 2005	Tunisia	81, 86, 89, 94, 99, 2004
Hungary	90, 94, 98, 2002	Turkey	83, 87, 91, 95, 99, 2002
India	80, 84, 89, 91, 96, 98, 99, 2004	Uruguay	84, 89, 94, 99, 2004
Indonesia	82, 87, 92, 97, 99, 2004	Venezuela	83, 88, 93, 98, 2000
Jordan	89, 93, 97, 2003	Zambia	91, 96, 2001
Kenya	92, 97, 2002	Zimbabwe	80, 85, 90, 96, 2002

**Appendix B: Variables Description and Data Sources****Table B1: Presentation of the data**

<b>Dependent Variable</b>	<b>Indicators</b>	<b>Sources</b>
<b>REELECT</b>	Binary variable receiving the value of 1 if the incumbent leader is re-elected and 0 otherwise.	World Political Leaders 1945-2005 (Zárate's Political Collections) "World Statesmen" online encyclopedia Database of Political Institutions (World Bank) International Institute for Democracy and Electoral Assistance (IDEA)

**Narrow Definition**

The narrow sample includes observations in which:

- The leader has been in office, at least, two budgetary years preceding the election year.
- The leader stayed in office at least until one month before the elections, if he quits within the month before the elections Reelect receives the value 0.
- There is no legal limit on the leader's term, otherwise the observation is excluded.

**Expanded Definition**

The expanded sample also includes:

- Leaders who left their position less than 365 days before the elections. In these cases, reelect receives the value 0.
- Candidates replacing leaders that were subject to a legal limit, forcing them to quit at the end of their term. In these cases, Reelect receives the value 1 if the reigning leader's party is winning in the elections and 0 if it loses.
- Leaders replacing a previous leader who died in the election year or in the preceding it. In these cases the replacing leader is considered as continuing the original leader's term.

Independent Variables	Indicators	Sources
<i>Age</i>	Age of the political leader.	Archigos (Chiozza, Goemans and Gleditsch, 2009)
<i>Aid</i>	Net Official Development Assistance (ODA): net disbursement amount (disbursements minus amortization).	OECD/DAC
<i>Bilateral aid</i>	ODA from bilateral donors	OECD/DAC
<i>Multilateral aid</i>	ODA from multilateral donors	OECD/DAC
<i>Loans</i>	Net ODA loans	OECD/DAC
<i>Grants</i>	ODA grants	OECD/DAC
<i>Financial aid</i>	Financial aid corresponds to DAC 5 CODE 450-V and includes aid for social infrastructures and services, economic infrastructure, production sectors and multisector.	OECD Credit Reporting System (CRS) Aid Activity database
<i>Political aid</i>	Government and civil society aid (DAC 5 CODE 150).	OECD Credit Reporting System (CRS) Aid Activity database
<i>Democracy level</i>	The polity2 index ranges from -10 to +10 with higher values denoting more freedom and equals the difference between the Polity democracy and Polity autocracy index.	Polity IV Project
<i>Democracy Wave</i>	Dummy variable receiving the value of 1 for the years 1990 and after.	
<i>Fisc_term</i>	Change in the average central government balance in the two years preceding the elections (not including the election year) compared to the previous two years.	International Financial Statistics (IFS) Government Financial Statistics (GFS)
<i>Fisc_elec</i>	Change in the balance in the election year relative to the previous year.	International Financial Statistics (IFS) Government Financial Statistics (GFS)
<i>GDPPC</i>	Average annual growth rate of the real GDP per capita between the current and the previous election year.	World Bank (WDI)
<i>Income</i>	Gross Domestic Product (GDP) divided by midyear population.	World Bank (WDI)
<i>Inflation</i>	Change in the inflation rate in the election year relative to the previous year.	World Bank (WDI) International Financial Statistics (IFS)
<i>Majoritarian system</i>	A binary variable, for each country in each election year, receiving the value 1 in a country with a Majoritarian electoral system, and 0 otherwise.	Database of Political Institutions (World Bank)

<b>Independent Variables</b>	<b>Indicators</b>	<b>Sources</b>
<i>Party</i>	Percent of seats in the parliament held by the leader's party in the year preceding the election year. It receives the value 0 in a presidential system (in cases where data are from IDEA it is the proportion of the public's votes received by the party).	IDEA Database of Political Institutions (World Bank)
<i>Population</i>	Total population	World Bank (WDI)
<i>Pressfreedom</i>	This variable takes the value 1 if there is no press freedom, 2 is the press is partly free and 3 if the press is free. Each country is rated in three areas of potential state influence over the media: legal environment, political influences and economic pressures, to determine the overall score.	Freedom House
<i>Resource rents</i>	We use the same definition as in Collier and Hoeffler (2009). Based on data from the World Bank's adjusted savings project we calculated the rents for each commodity by subtracting the cost from the commodity price. We then multiplied the rents per unit by the amount extracted and summed across the different commodities. We then calculated the share of rents in GDP. Natural resources for which rent data were available are: oil, gas, coal, lignite, bauxite, copper, iron, lead, nickel, phosphate, tin, zinc, silver and gold. Data are available from the World Bank through their 'Adjusted Net Savings' project.	World Bank (WDI)
<i>Votes</i>	Percent of votes for the leader in a presidential system in the first round of the previous elections; receives the value 0 in a parliamentary system.	IDEA Database of Political Institutions (World Bank)